# Test Report

**Client** : ZHONGSHAN Y-CHEN LIGHTING TECHNOLOGY CO.LTD

**Address** : No.28.Kanglong No.3 road. Maohui industrial, Henglan, Guangdong, China

**Description of the submitted sample(s):**

| | | |
|---|---|---|
| Sample Name | : | LED STREET LIGHT |
| Model/Type | : | CET-110-50M2 |
| Trademark | : | N/A |
| Ratings | : | 85-265VAC, 50/60Hz, 100W |
| Test Item | : | LM-79-19 |
| State of Sample(s) | : | Normal |
| Sample Quantity | : | 1 PCS |
| Manufacturer | : | ZHONGSHAN Y-CHEN LIGHTING TECHNOLOGY CO.LTD |
| Address | : | No.28.Kanglong No.3 road. Maohui industrial, Henglan, Guangdong, China |
| Sample Received Date | : | 2025-09-08 |
| Sample tested Date | : | 2025-09-08 |
| Test Standard | : | LM-79-19 |
| Test Laboratory | : | Shenzhen AOCE Electronic Technology Service Co., Ltd |
| Testing location | : | Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China |
| Remark | : | The tested sample(s) and the sample information are provided by the client. |

Compiled by: Bill Hu

Approved by: Robin Lu

Robin Lu
Lab Supervisor

Date : 2025-10-10

## Summary of Result

| Test Item | Test Result | |
|---|---|---|
| | Luminous Flux (lm) | Luminous Efficacy (lm/W) |
| Integrating Sphere Test | 13655.242 | 142.688 |
| Goniophotometer Test | 14154.16 | 148.21 |

# 1 Test Condition

### 1.1 Air Temperature

The ambient temperature in which measurements are being taken shall be maintained at 25°C±1°C, measured at a point not more than 1 m from the SSL product and at the same height as the SSL product. The temperature sensor shall be shielded from direct optical radiation from the SSL product and optical radiation from any other source. If measurements are performed at other than this recommended temperature, this is a non-standard condition and shall be noted in the test report.

### 1.2 Thermal Conditions for Mounting SSL Products

The method of mounting can be the primary path for heat flow away from the device and can affect measurement results significantly. The SSL product under test shall be mounted to the measuring instrument so that heat conduction through supporting objects causes negligible cooling effects. If the SSL product under test is provided with a support structure that is designated to be used as a component of the luminaire thermal management system, the product shall be tested with the support structure attached. Any such support structure included in the measurement shall be reported.

### 1.3 Air Movement

The incidence of air movements on the surface of a SSL product under test may substantially after electrical and photometric values. Air flow around the SSL product being tested should be such that normal convective air flow induced by device under test is not affected.

### 1.4 Waveshape of AC Power Supply

The AC power supply, while operating the SSL product, shall have a sinusoidal voltage waveshapeat the prescribed frequency typically 50/60 Hz or 50 Hz) such that the RMS summation of the harmonic components does not exceed 3 percent of the fundamental during operation of the test item.

### 1.5 Voltage Regulation

The voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ±0.2 percent under load.

### 1.6 Seasoning

For the purpose of rating new SSL products, SSL products shall be tested with no seasoning.

### 1.7 Stabilization

Before measurements are taken, the SSL product under test shall be operated long enough to reach stabilization and temperature equilibrium. The time required for stabilization depends on the type of SSL products under test. The stabilization time typically ranges from 30 min to 2 or more hours for large SSL products.

### 1.8 Operating Orientation

The SSL product under test shall be evaluated in the operating orientation recommended by the manufacturer for an intended use of the SSL product. Stabilization and photometric measurements of SSL products shall be done in such operating orientation.

## 2 Test Method

### 2.1 Integrating Sphere Measurement

The integrating sphere system includes AC power source, digital power meter, DC power supply, spectrophotometer, and integrating sphere. The system is calibrated by standard lamp before measurement weekly. The standard lamp has been calibrated regularly and traced to the National Primary Standard.

The 4π geometry was used to measure total luminous, luminous efficacy, chromaticity coordinates, correlated color temperature, and color rendering index, the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm. The product was operated in its intended orientation and was recorded in the report.

### 2.2 Goniophotometer Measurement

The goniophotometer system is calibrated by standard lamp before measurement weekly. The standard lamp has been calibrated regularly and traced to National Primary Standards.

Type C goniophotometer was used for measuring total luminous flux, luminous efficacy, luminous intensity distribution, and color angular uniformity, which were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals. The product was operated in its intended orientation and was recorded in the report.

### 2.3 Electrical Measurement

According to ANSI C82.77-2002, the measurement was made using a digital power meter and power supply, the SSL product under test was operated at rated voltage and stabilized enough before measurement. The total harmonic distortion of current and power factor can be calculated from the digital power meter. The digital power meter was calibrated regularly and traced to National Primary Standards.

# 3 Test Result

## 3.1 Integrating Sphere

| Temperature (°C) | Test Humidity | Orientation | Stabilization Time(min) | Test Time(min) | Number of hours operated prior to measurement |
|---|---|---|---|---|---|
| 24.8 | 48.9% | Face down | 10 | 5 | 0 |

| Input Voltage (V) | Frequency (Hz) | Current (A) | Power Factor | Power (W) |
|---|---|---|---|---|
| 230.0 | 50 | 0.420 | 0.991 | 95.7 |

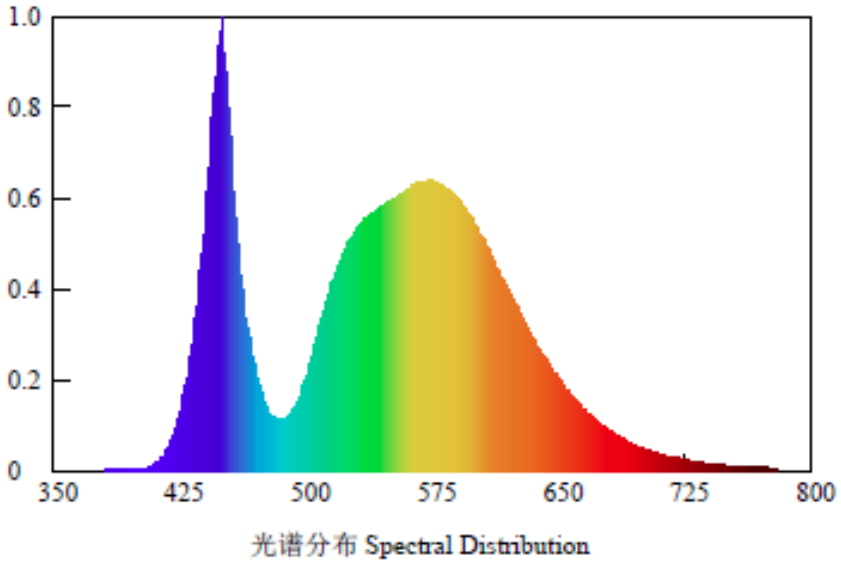
| Luminous Flux (lm) | Radiant Flux (W) | CCT (K) | Duv | Luminous Efficacy (lm/W) |
|---|---|---|---|---|
| 13655.242 | 36.102 | 5084 | +0.00341 | 142.688 |

| Ra | SDCM | X | y | u’ | v’ |
|---|---|---|---|---|---|
| 70.4 | 1.58 | 0.3433 | 0.3570 | 0.2082 | 0.487 |

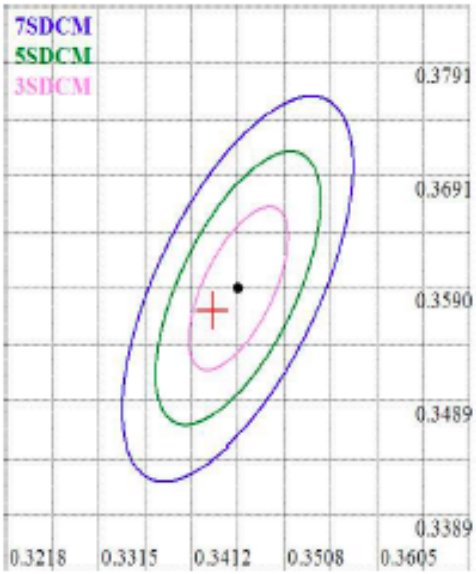
| R1 | R2 | R3 | R4 | R5 |
|---|---|---|---|---|
| 67 | 76 | 82 | 71 | 68 |
| R6 | R7 | R8 | R9 | R10 |
| 67 | 80 | 53 | -42 | 43 |
| R11 | R12 | R13 | R14 | R15 |
| 67 | 41 | 69 | 90 | 61 |

**Spectral Distribution & Chromaticity Diagram**

## 光色参数 Spectroradiometric Parameters




光谱分布 Spectral Distribution




Nominal CCT:ANSI_F5000K
x0=0.3433 y0=0.3570

色品坐标 Chromaticity Coordinates: x=0.3433 y=0.3570 u'=0.2082 v'=0.487

相关色温 Correlated Color Temperature: 5084 K

主波长 Dominant Wavelength: 567.0 nm(E)

显色指数 Rendering Index: Ra=70.4

峰值波长 Peak Wavelength: 449.8 nm

色纯度 Purity: 0.1011

谱线带宽 Bandwidth: 21.5nm

光通量 Luminous Flux: 13655.242 lm

辐射通量 Radiant Flux: 39.102 W

色 比 Color Ratio: Kr=32.6% Kg=59.0% Kb=8.5%

色 容 差 Color Tolerance(SDCM): 1.5819

色 偏 差 Chromaticity Difference: +0.00341Duv

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| R1=67 | R2=76 | R3=82 | R4=71 | R5=68 | R6=67 | R7=80 | R8=53 |
| R9=-42 | R10=43 | R11=67 | R12=41 | R13=69 | R14=90 | R15=61 | |

## 电 参 数 Electric Parameters

电压 Voltage: 230.0 V

电流 Current: 0.420 A

功率因数 Power Factor: 0.991

功率 Power: 95.7 W

发光效率 Luminous Efficacy: 142.688 lm/W

**3.2. Goniophotometer**

| Temperature (°C) | Test Humidity | Orientation | Stabilization Time(min) | Test Time(min) | Number of hours operated prior to measurement |
|---|---|---|---|---|---|
| 24.9 | 48.5% | Face forward | 15 | 30 | 0 |

| Input Voltage (V) | Frequency (Hz) | Current (A) | Power Factor | Power (W) |
|---|---|---|---|---|
| 230.0 | 50 | 0.419 | 0.989 | 95.5 |

| Luminous Flux (lm) | CBCP (cd) | Field Angle (10%) | Beam Angle (50%) | Luminous Efficacy (lm/W) |
|---|---|---|---|---|
| 14154.16 | 14243.26 | 88.8*88.7 | 56.0*56.5 | 148.21 |

Photometric Results

Lumens(lm): 14154.16
Efficiency(%): 108.88%
Lumens(lm)/Power(W): 148.21
Central intensity(cd): 14034.670
Maximum intensity(cd): 14243.260
Angle of maximum intensity: C=30.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=56.0
[C90/270]Total=56.5
Field angle(10%Imax): [C0/180]Total=88.8
[C90/270]Total=88.7
Maximum s/h(1/2): C0_180=0.80 C90_270=0.86
Maximum s/h(1/4): C0_180=0.83 C90_270=0.86
Up flux rate of lamp(%): 1.42%
Down flux rate of lamp(%): 107.46%
Up flux rate of LUM(%): 1.30%
Down flux rate of LUM(%): 98.70%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 91.688%

**4.1. Zonal flux distribution table**

| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 0.0 | 14131.120 | .000 | .000 | .000% | .000% |
| 5.0 | 13899.810 | 335.102 | 335.102 | 2.578% | 2.578% |
| 10.0 | 13179.130 | 968.699 | 1303.801 | 7.452% | 10.029% |
| 15.0 | 11986.160 | 1492.788 | 2796.588 | 11.483% | 21.512% |
| 20.0 | 10346.150 | 1840.496 | 4637.084 | 14.158% | 35.670% |
| 25.0 | 8378.522 | 1963.872 | 6600.956 | 15.107% | 50.777% |
| 30.0 | 6315.854 | 1859.586 | 8460.542 | 14.305% | 65.081% |
| 35.0 | 4464.639 | 1587.503 | 10048.040 | 12.212% | 77.293% |
| 40.0 | 2607.172 | 1179.878 | 11227.920 | 9.076% | 86.369% |
| 45.0 | 1263.493 | 716.685 | 11944.610 | 5.513% | 91.882% |
| 50.0 | 775.638 | 412.036 | 12356.640 | 3.170% | 95.051% |
| 55.0 | 690.308 | 318.746 | 12675.390 | 2.452% | 97.503% |
| 60.0 | 617.665 | 302.334 | 12977.720 | 2.326% | 99.829% |
| 65.0 | 572.119 | 289.239 | 13266.960 | 2.225% | 102.054% |
| 70.0 | 463.477 | 262.220 | 13529.180 | 2.017% | 104.071% |
| 75.0 | 322.381 | 205.411 | 13734.590 | 1.580% | 105.651% |
| 80.0 | 187.160 | 136.339 | 13870.930 | 1.049% | 106.700% |
| 85.0 | 81.896 | 73.109 | 13944.040 | .562% | 107.262% |
| 90.0 | 12.575 | 25.867 | 13969.910 | .199% | 107.461% |
| 95.0 | 3.925 | 4.518 | 13974.420 | .035% | 107.496% |
| 100.0 | 4.668 | 2.335 | 13976.760 | .018% | 107.514% |
| 105.0 | 5.804 | 2.802 | 13979.560 | .022% | 107.535% |
| 110.0 | 7.374 | 3.444 | 13983.010 | .026% | 107.562% |
| 115.0 | 9.897 | 4.373 | 13987.380 | .034% | 107.595% |
| 120.0 | 13.864 | 5.776 | 13993.160 | .044% | 107.640% |
| 125.0 | 19.556 | 7.725 | 14000.880 | .059% | 107.699% |
| 130.0 | 27.644 | 10.263 | 14011.140 | .079% | 107.778% |
| 135.0 | 37.345 | 13.132 | 14024.270 | .101% | 107.879% |
| 140.0 | 48.111 | 15.823 | 14040.100 | .122% | 108.001% |
| 145.0 | 59.424 | 17.941 | 14058.040 | .138% | 108.139% |
| 150.0 | 70.513 | 19.134 | 14077.170 | .147% | 108.286% |
| 155.0 | 80.788 | 19.147 | 14096.320 | .147% | 108.433% |
| 160.0 | 90.811 | 17.998 | 14114.320 | .138% | 108.572% |
| 165.0 | 101.493 | 15.849 | 14130.170 | .122% | 108.694% |
| 170.0 | 112.316 | 12.683 | 14142.850 | .098% | 108.791% |
| 175.0 | 121.526 | 8.365 | 14151.210 | .064% | 108.856% |
| 180.0 | 125.226 | 2.950 | 14154.170 | .023% | 108.878% |

**4.2. Zonal flux distribution table**

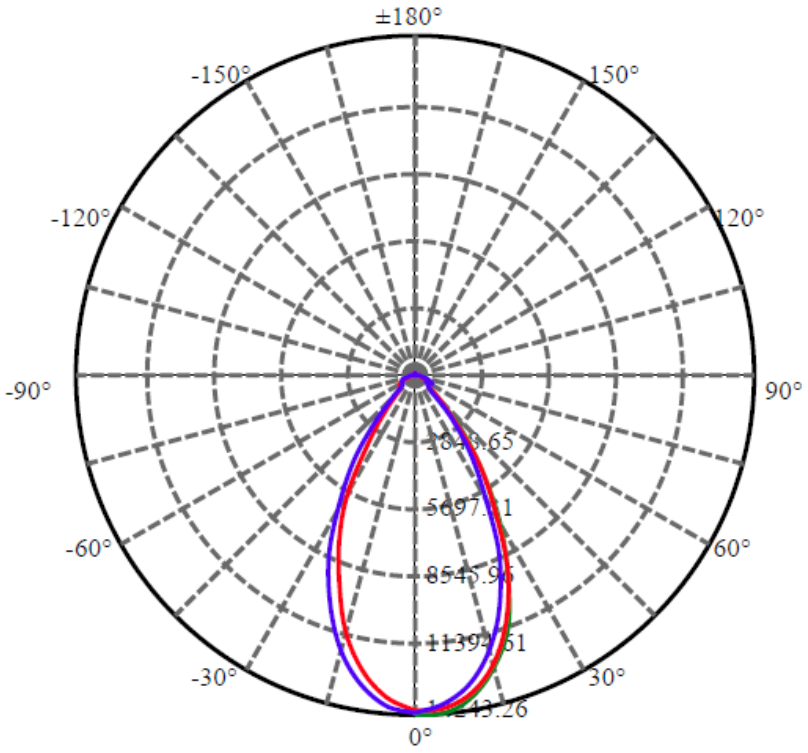
ZONAL LUMEN SUMMARY

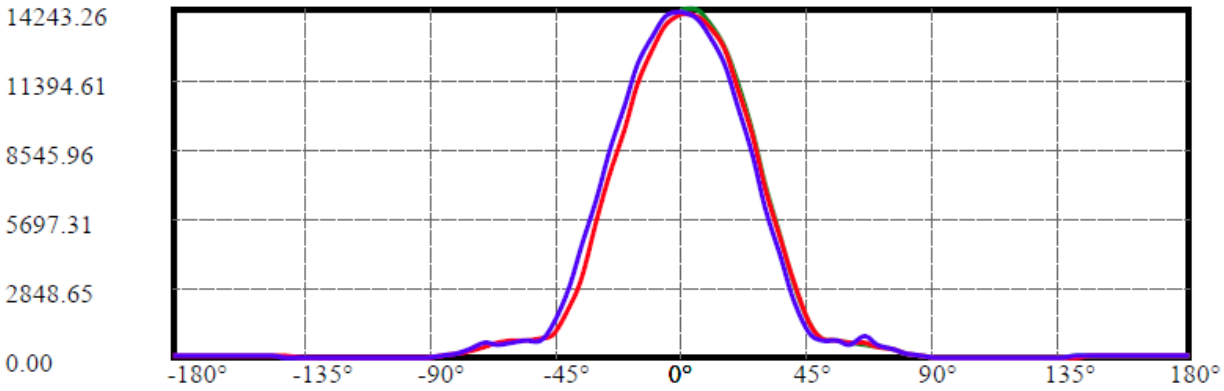
| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-30 | 8460.54 | 65.08% | 59.77% |
| 0-40 | 11227.92 | 86.37% | 79.33% |
| 0-60 | 12977.72 | 99.83% | 91.69% |
| 0-90 | 13969.91 | 107.46% | 98.70% |
| 0-120 | 13993.16 | 107.64% | 98.86% |
| 0-180 | 14154.17 | 108.88% | 100.00% |
| 60-90 | 1294.52 | 9.96% | 9.15% |
| 90-120 | 49.12 | 0.38% | 0.35% |
| 90-130 | 67.10 | 0.52% | 0.47% |
| 90-150 | 133.13 | 1.02% | 0.94% |
| 90-180 | 207.18 | 1.59% | 1.46% |
| 0-40.67 | 11323.33 | 87.10% | 80.00% |

ZONAL LUMEN SUMMARY

| | |
|---|---|
| 0-10 | 1303.80 |
| 10-20 | 3333.28 |
| 20-30 | 3823.46 |
| 30-40 | 2767.38 |
| 40-50 | 1128.72 |
| 50-60 | 621.08 |
| 60-70 | 551.46 |
| 70-80 | 341.75 |
| 80-90 | 98.98 |
| 90-100 | 6.85 |
| 100-110 | 6.25 |
| 110-120 | 10.15 |
| 120-130 | 17.99 |
| 130-140 | 28.95 |
| 140-150 | 37.08 |
| 150-160 | 37.14 |
| 160-170 | 28.53 |
| 170-180 | 8.37 |

**4.3. Light Distribution Curve**




C30(Max):

C0/C180:

C90/C270:

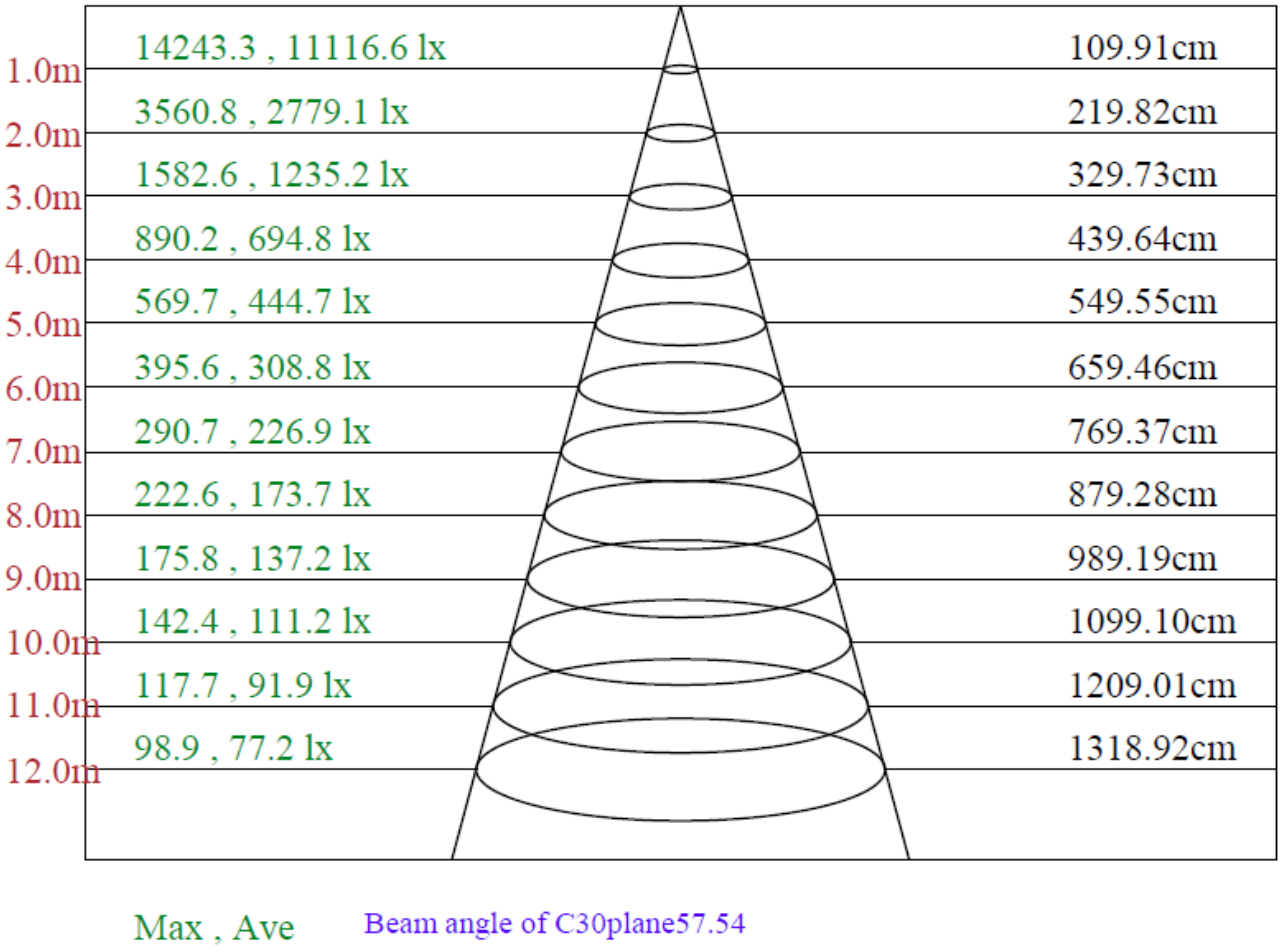
Field angle(10%Imax):C0/180Left:43.0 Right:45.8

:C90/270Left:45.0 Right:43.7

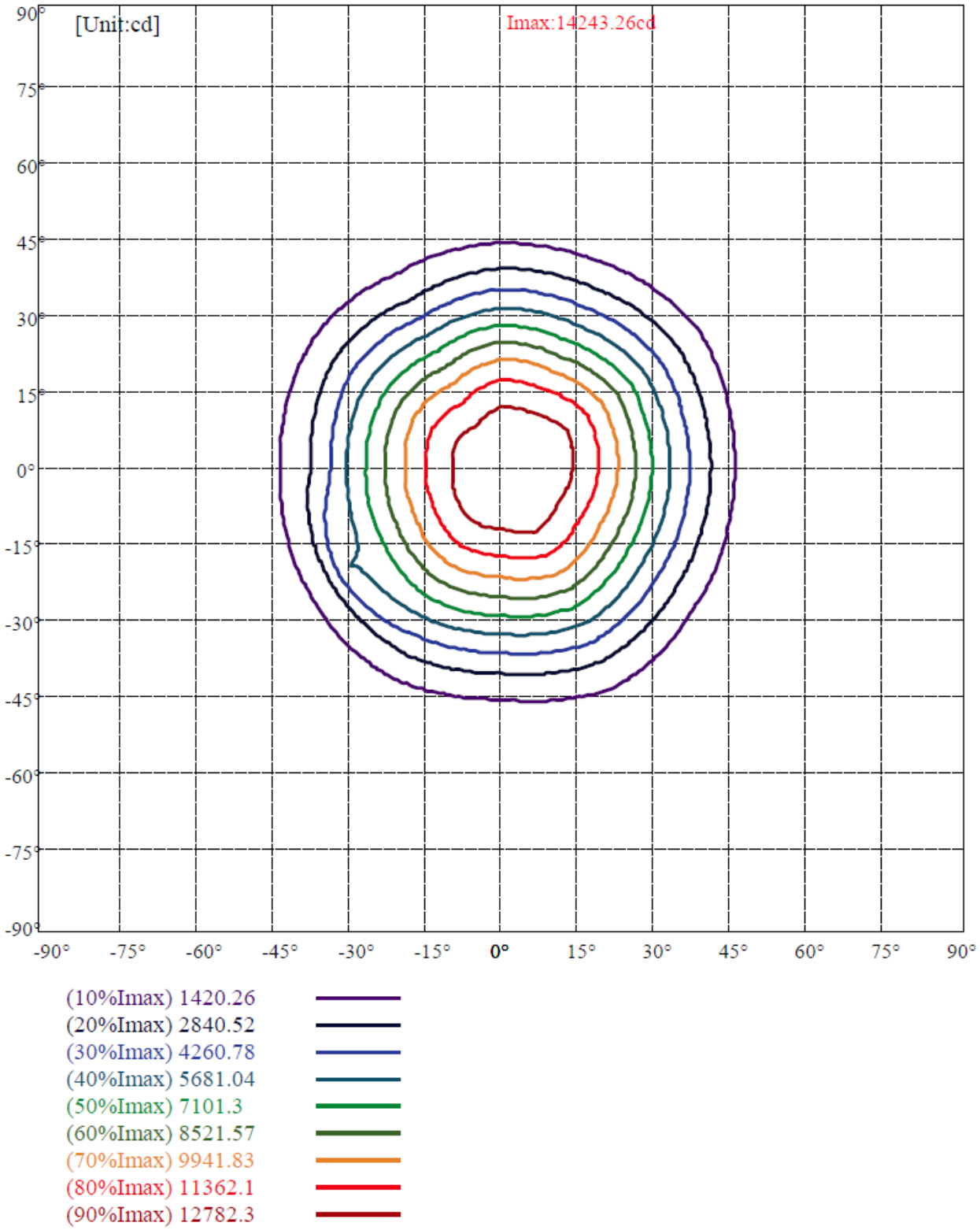
Beam Angle(50%Imax):C0/180Left:26.4 Right:29.7

:C90/270Left:28.7 Right:27.8

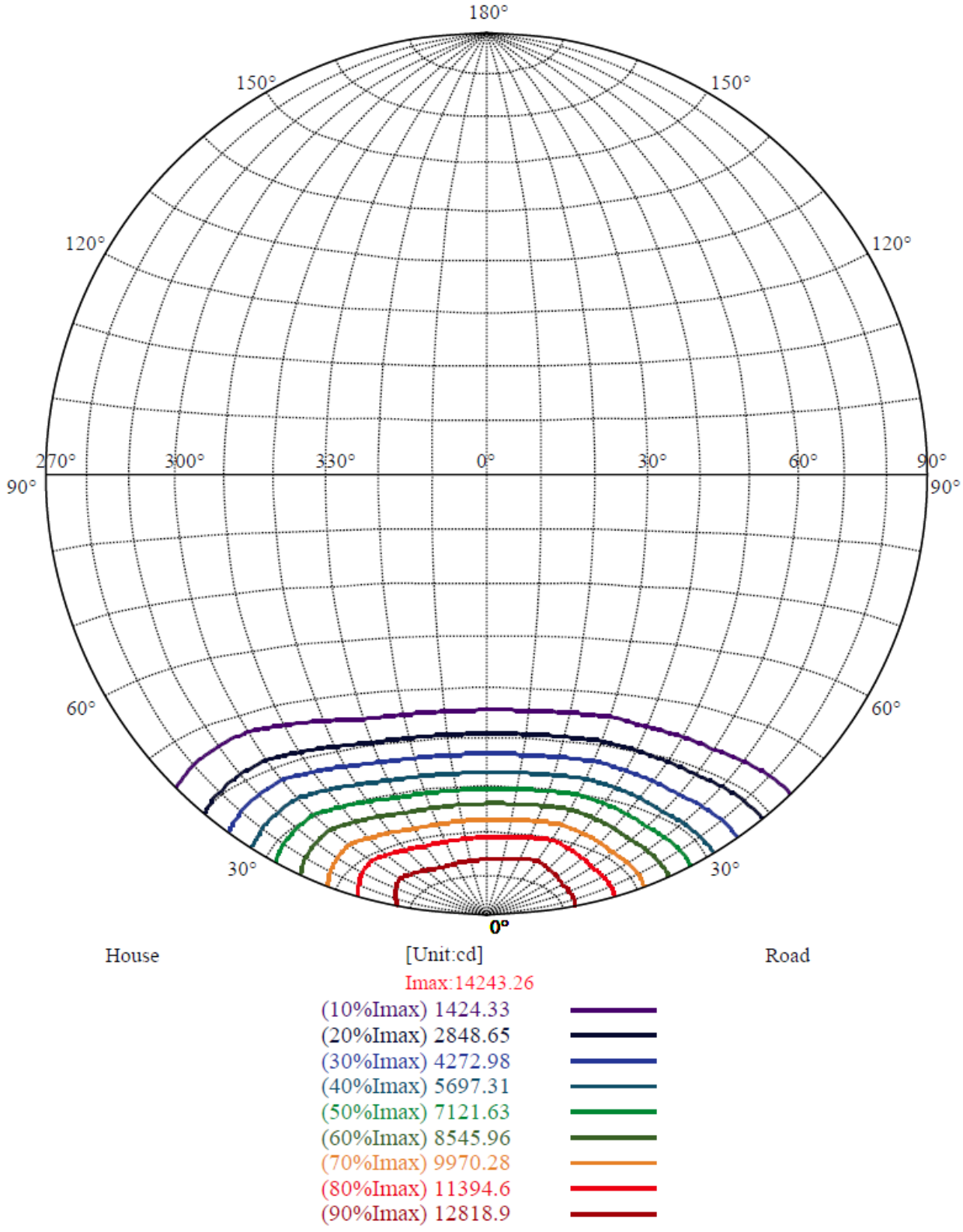
**4.4. Lux distance Curve**



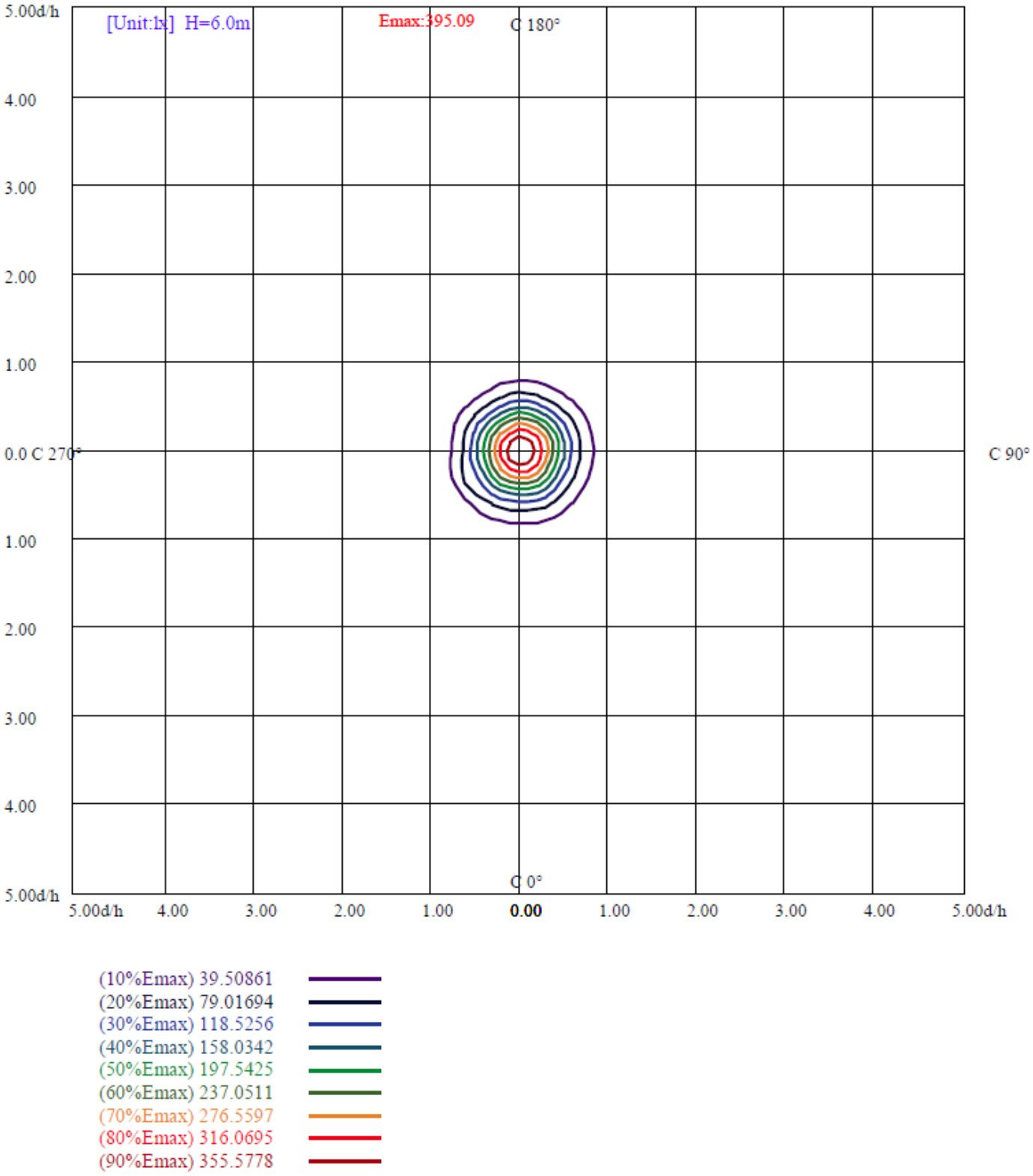

**4.5. ISO-Intensity(V-H)**



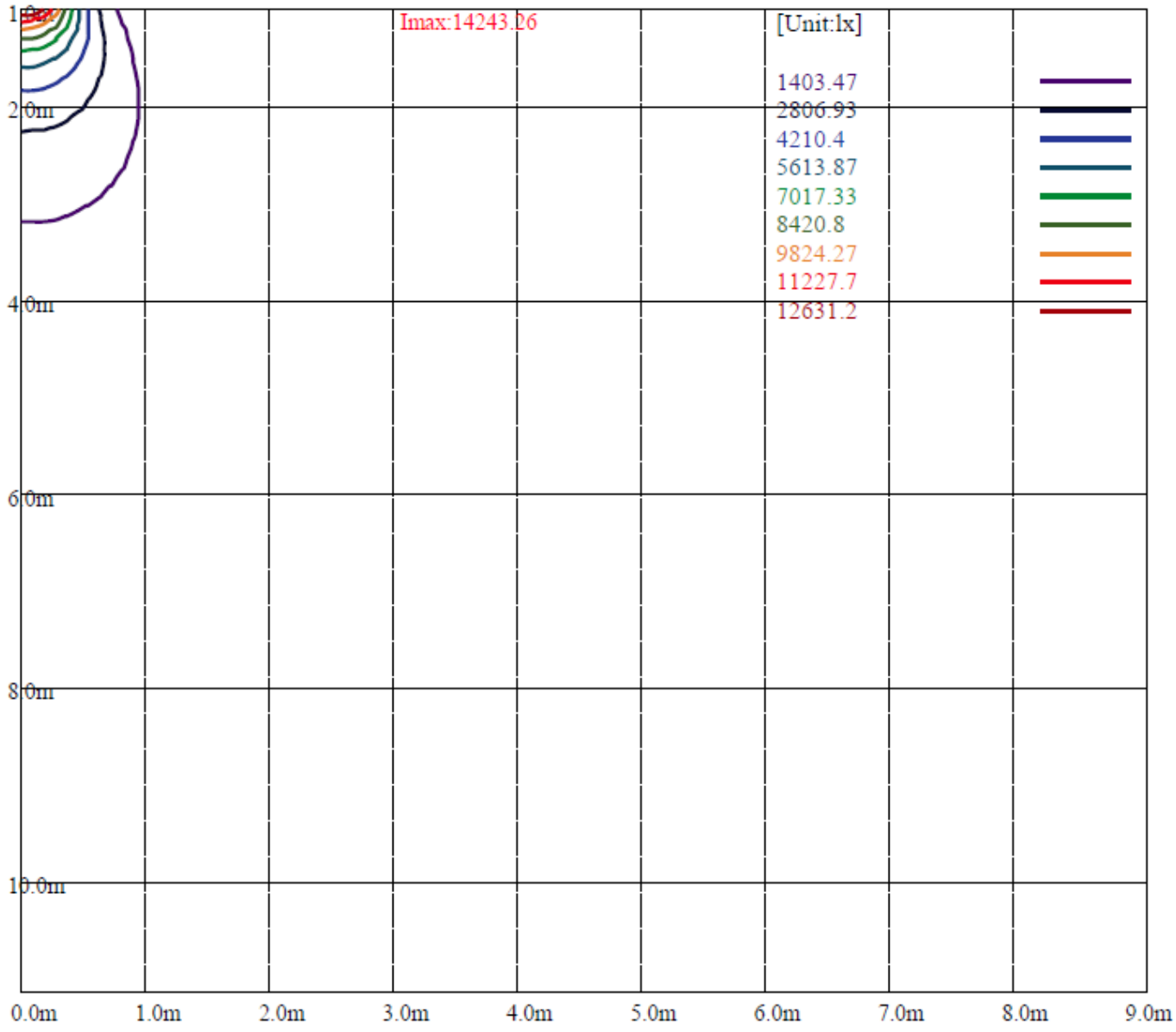

**4.6. ISO candela diagram on circular web**




**4.7. ISO illuminance diagram**




**4.8. Space ISO Lux diagram**




**4.9. Luminance Limitting Curve(no luminous side)**

Luminance Table

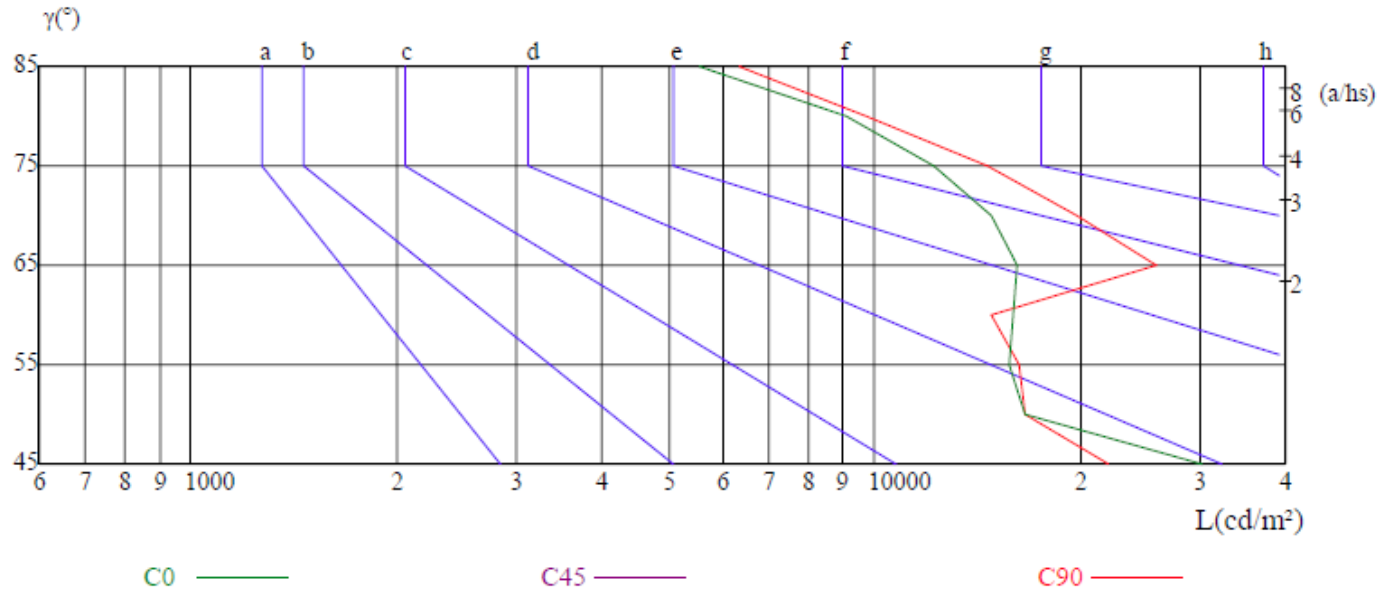
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|---|---|---|---|---|---|---|---|---|---|
| C0 | 30151 | 16653 | 15783 | 16012 | 16177 | 14852 | 12219 | 9096 | 5552 |
| C45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C90 | 22065 | 16659 | 16341 | 14873 | 25816 | 19821 | 14674 | 9752 | 6328 |

| L横(65) | L纵(65) | L45(65) | L横(75) | L纵(75) | L45(75) | L横(85) | L纵(85) | L45(85) |
|---|---|---|---|---|---|---|---|---|
| 23258 | 27777 | 0 | 20069 | 23256 | 0 | 15996 | 19849 | 0 |

Glare Table

| Glare | Quality | Service Values Illuminance(lx) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1.15 | A | 2000 | 1000 | 500 | <=300 | | | | |
| 1.5 | B | | 2000 | 1000 | 500 | <=300 | | | |
| 1.85 | C | | | 2000 | 1000 | 500 | <=300 | | |
| 2.2 | D | | | | 2000 | 1000 | 500 | <=300 | |
| 2.55 | E | | | | | 2000 | 1000 | 500 | <=300 |
| | | a | b | c | d | e | f | g | h |

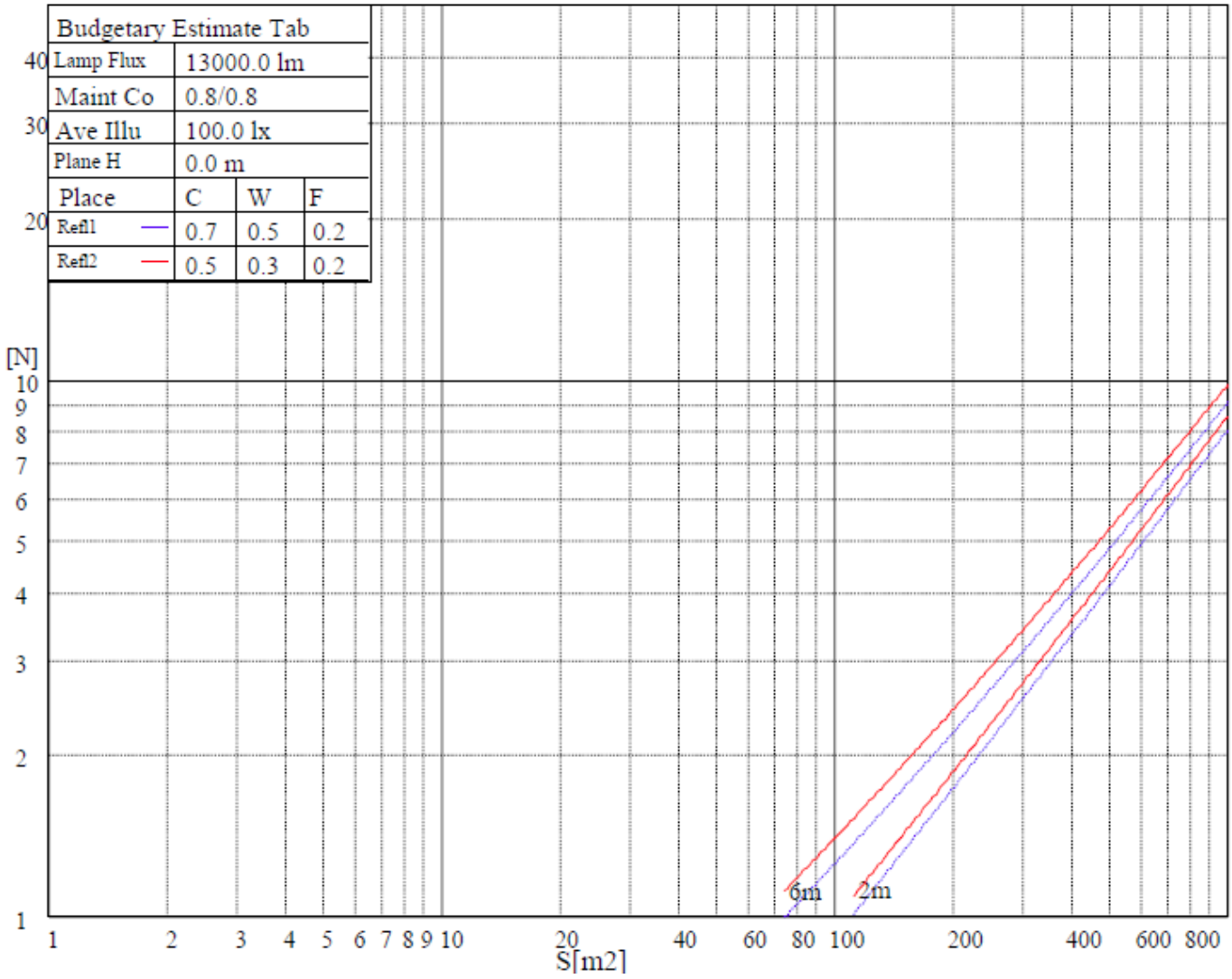
Luminance Limitting Curve




**4.10. UGR Glare**

| Illumination assessment according UGR | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Rf of Ceiling | | 70 | 70 | 50 | 50 | 30 | 70 | 70 | 50 | 50 | 30 |
| Rf of Wall | | 50 | 30 | 50 | 30 | 30 | 50 | 30 | 50 | 30 | 30 |
| Rf of Floor | | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Room dimensions | | Viewed crosswise | | | | | Viewed endwise | | | | |
| X | Y | | | | | | | | | | |
| 2H | 2H | 19.1 | 20.4 | 19.3 | 20.5 | 20.6 | 19.1 | 20.4 | 19.3 | 20.5 | 20.6 |
| | 3H | 20.9 | 22.1 | 21.1 | 22.2 | 22.4 | 21.0 | 22.2 | 21.2 | 22.3 | 22.5 |
| | 4H | 21.5 | 22.6 | 21.8 | 22.8 | 23.0 | 21.6 | 22.8 | 21.9 | 22.9 | 23.1 |
| | 6H | 21.9 | 22.9 | 22.1 | 23.1 | 23.3 | 22.0 | 23.1 | 22.3 | 23.2 | 23.4 |
| | 8H | 22.0 | 22.9 | 22.2 | 23.1 | 23.3 | 22.1 | 23.1 | 22.4 | 23.3 | 23.5 |
| | 12H | 22.1 | 23.0 | 22.3 | 23.2 | 23.4 | 22.2 | 23.2 | 22.5 | 23.4 | 23.6 |
| 4H | 2H | 19.6 | 20.7 | 19.8 | 20.9 | 21.0 | 19.5 | 20.7 | 19.8 | 20.8 | 21.0 |
| | 3H | 21.6 | 22.6 | 21.9 | 22.8 | 23.0 | 21.7 | 22.6 | 21.9 | 22.8 | 23.0 |
| | 4H | 19.1 | 20.4 | 19.3 | 20.5 | 20.6 | 19.1 | 20.4 | 19.3 | 20.5 | 20.6 |
| | 6H | 22.7 | 23.4 | 23.0 | 23.7 | 24.0 | 22.8 | 23.5 | 23.1 | 23.8 | 24.1 |
| | 8H | 22.8 | 23.5 | 23.1 | 23.8 | 24.0 | 22.9 | 23.6 | 23.2 | 23.9 | 24.1 |
| | 12H | 22.9 | 23.5 | 23.2 | 23.8 | 24.1 | 23.1 | 23.6 | 23.4 | 24.0 | 24.2 |
| 8H | 4H | 22.5 | 23.2 | 22.9 | 23.5 | 23.8 | 22.6 | 23.3 | 22.9 | 23.6 | 23.8 |
| | 6H | 23.0 | 22.9 | 23.3 | 23.9 | 24.1 | 23.1 | 22.9 | 23.4 | 23.9 | 24.2 |
| | 8H | 23.2 | 23.6 | 23.5 | 24.0 | 24.3 | 23.2 | 23.7 | 23.6 | 24.1 | 24.4 |
| | 12H | 23.5 | 24.0 | 23.9 | 23.8 | 24.7 | 23.7 | 24.1 | 24.0 | 23.9 | 24.8 |
| 12H | 4H | 22.5 | 23.1 | 22.9 | 23.4 | 23.7 | 22.6 | 23.2 | 22.9 | 23.5 | 23.8 |
| | 6H | 23.6 | 23.5 | 23.4 | 23.8 | 24.1 | 23.7 | 23.6 | 23.5 | 23.9 | 24.2 |
| | 8H | 23.2 | 23.6 | 23.6 | 24.0 | 24.3 | 23.3 | 23.7 | 23.7 | 24.0 | 24.4 |
| Variation with the observer position at spacings: | | | | | | | | | | | |
| S = 1.0H | | 1.3/-1.0 | | | | | 1.6/-1.5 | | | | |
| S = 1.5H | | 2.6/-1.3 | | | | | 2.9/-1.4 | | | | |
| S = 2.0H | | 3.7/-1.1 | | | | | 4.3/-1.4 | | | | |
| Standard tables: | | BK3 | | | | | BK3 | | | | |
| Uncorrected UGR | | 4.9 | | | | | 5.3 | | | | |

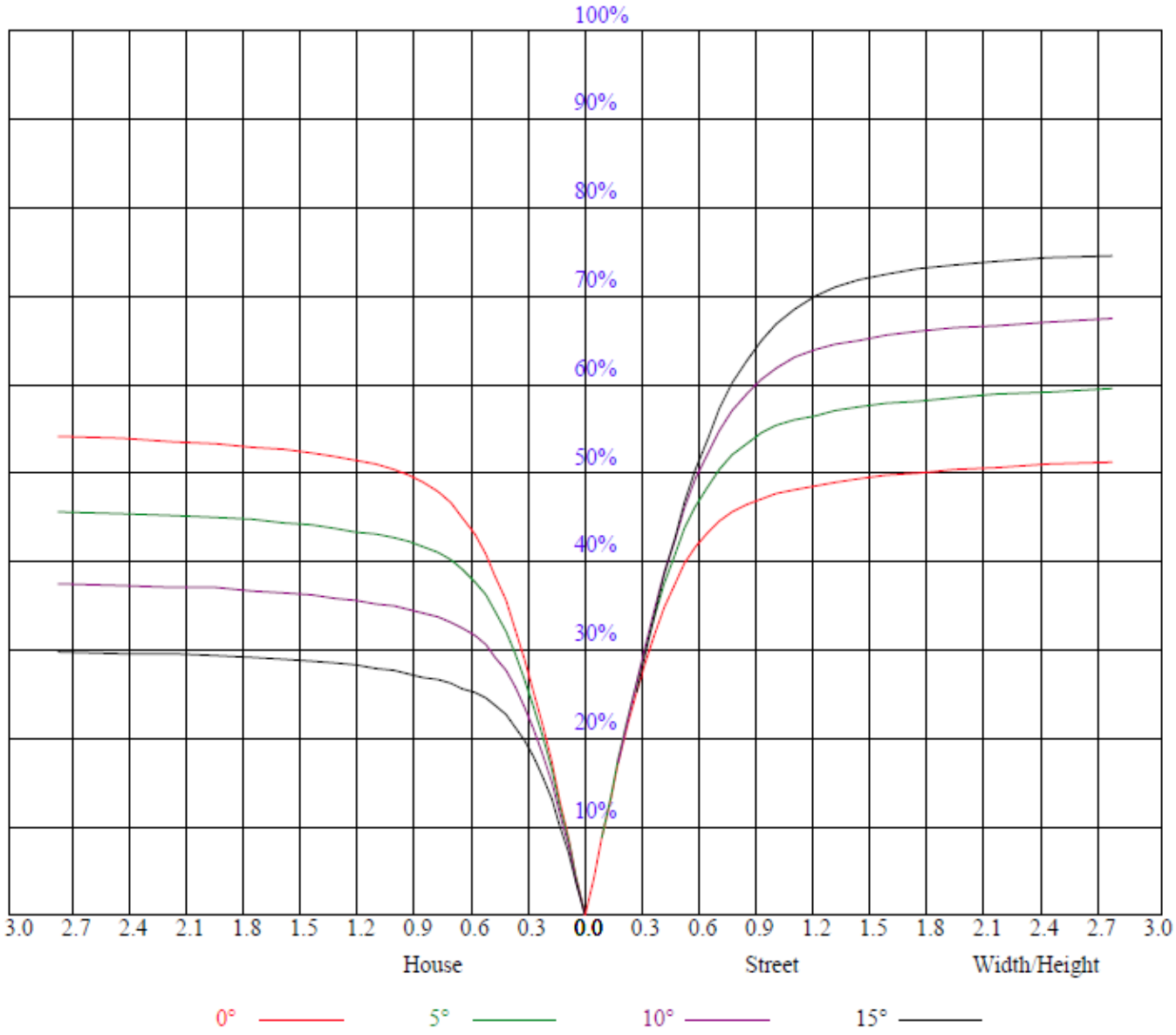
**4.11. Budgetary Estimate Table**


Budgetary Estimate Tab
Lamp Flux 13000.0 lm
Maint Co 0.8/0.8
Ave Illu 100.0 lx
Plane H 0.0 m
Place C W F
Refl1 0.7 0.5 0.2
Refl2 0.5 0.3 0.2
[N]
S[m2]
6m
2m

### 4.12. Utilization factor table for indoor luminaire

| RHOCC | 80 | | | 70 | | | 50 | | | 30 | | | 10 | | | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RHOW | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| RCR | COEFFCIENTS OF UTILIZATION RHOFC=20 CU | | | | | | | | | | | | | | | |
| 0 | 1.29 | 1.29 | 1.29 | 1.26 | 1.26 | 1.26 | 1.20 | 1.20 | 1.20 | 1.15 | 1.15 | 1.15 | 1.10 | 1.10 | 1.10 | 1.07 |
| 1 | 1.18 | 1.15 | 1.12 | 1.16 | 1.13 | 1.10 | 1.11 | 1.08 | 1.06 | 1.06 | 1.05 | 1.03 | 1.02 | 1.01 | 1.00 | 0.97 |
| 2 | 1.08 | 1.03 | 0.98 | 1.06 | 1.01 | 0.97 | 1.02 | 0.98 | 0.95 | 0.99 | 0.95 | 0.92 | 0.95 | 0.93 | 0.90 | 0.88 |
| 3 | 0.99 | 0.93 | 0.88 | 0.98 | 0.92 | 0.87 | 0.94 | 0.90 | 0.85 | 0.92 | 0.87 | 0.84 | 0.89 | 0.85 | 0.82 | 0.80 |
| 4 | 0.92 | 0.85 | 0.79 | 0.90 | 0.84 | 0.79 | 0.88 | 0.82 | 0.78 | 0.85 | 0.81 | 0.77 | 0.83 | 0.79 | 0.76 | 0.74 |
| 5 | 0.85 | 0.78 | 0.73 | 0.84 | 0.77 | 0.72 | 0.82 | 0.76 | 0.71 | 0.80 | 0.75 | 0.71 | 0.78 | 0.73 | 0.70 | 0.68 |
| 6 | 0.79 | 0.72 | 0.67 | 0.78 | 0.71 | 0.66 | 0.76 | 0.70 | 0.66 | 0.75 | 0.69 | 0.65 | 0.73 | 0.68 | 0.65 | 0.63 |
| 7 | 0.74 | 0.67 | 0.62 | 0.73 | 0.66 | 0.61 | 0.72 | 0.66 | 0.61 | 0.70 | 0.65 | 0.61 | 0.69 | 0.64 | 0.60 | 0.58 |
| 8 | 0.69 | 0.62 | 0.57 | 0.69 | 0.62 | 0.57 | 0.67 | 0.61 | 0.57 | 0.66 | 0.61 | 0.56 | 0.65 | 0.60 | 0.56 | 0.55 |
| 9 | 0.65 | 0.58 | 0.54 | 0.65 | 0.58 | 0.53 | 0.64 | 0.57 | 0.53 | 0.62 | 0.57 | 0.53 | 0.61 | 0.56 | 0.53 | 0.51 |
| 10 | 0.62 | 0.55 | 0.50 | 0.61 | 0.54 | 0.50 | 0.60 | 0.54 | 0.50 | 0.59 | 0.54 | 0.50 | 0.58 | 0.53 | 0.49 | 0.48 |

### 4.13. Coefficient Utilization Curve




**4.14. Intensity data(cd)**

| C/γ(°) | 0.0 | 5.0 | 10.0 | 15.0 | 20.0 | 25.0 | 30.0 | 35.0 | 40.0 | C/γ(°) | 180.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 14034.67 | 14007.75 | 13530.01 | 12613.20 | 11082.39 | 9136.08 | 6868.46 | 4900.28 | 3167.60 | 0.0 | 118.09 |
| 30.0 | 14243.26 | 14204.57 | 13699.91 | 12771.33 | 11304.44 | 9248.79 | 7033.32 | 4910.37 | 3123.86 | 30.0 | 129.19 |
| 60.0 | 14202.89 | 13969.06 | 13318.05 | 12153.96 | 10495.30 | 8291.61 | 6101.37 | 4175.24 | 2432.31 | 60.0 | 130.37 |
| 90.0 | 14149.06 | 13881.59 | 13207.02 | 12029.48 | 10382.59 | 8308.43 | 6076.14 | 4151.69 | 2412.29 | 90.0 | 127.18 |
| 120.0 | 14064.95 | 13612.43 | 12660.31 | 11248.93 | 9447.29 | 7320.97 | 5332.60 | 3295.28 | 1785.16 | 120.0 | 125.32 |
| 150.0 | 14091.86 | 13708.32 | 12796.56 | 11435.66 | 9723.17 | 7709.56 | 5790.16 | 3869.08 | 2096.03 | 150.0 | 121.29 |
| 180.0 | 14034.67 | 13600.66 | 12623.30 | 11211.92 | 9400.19 | 7532.93 | 5652.22 | 3286.20 | 2021.68 | 180.0 | 118.09 |
| 210.0 | 14243.26 | 13785.70 | 12826.84 | 11351.55 | 9610.46 | 7751.62 | 5803.62 | 5674.09 | 2190.24 | 210.0 | 129.03 |
| 240.0 | 14202.89 | 13982.52 | 13203.66 | 11957.14 | 10342.22 | 8456.47 | 6567.34 | 4629.44 | 2839.57 | 240.0 | 130.37 |
| 270.0 | 14149.06 | 13937.10 | 13203.66 | 12036.21 | 10392.69 | 8528.80 | 6572.39 | 4565.52 | 2813.16 | 270.0 | 127.18 |
| 300.0 | 14064.95 | 14093.55 | 13605.71 | 12633.39 | 11141.27 | 9359.81 | 7262.10 | 5309.05 | 3399.74 | 300.0 | 125.32 |
| 330.0 | 14091.86 | 14014.48 | 13474.49 | 12391.15 | 10831.74 | 8897.20 | 6730.52 | 4809.44 | 3004.43 | 330.0 | 121.29 |
| 360.0 | 14034.67 | 14007.75 | 13530.01 | 12613.20 | 11082.39 | 9136.08 | 6868.46 | 4900.28 | 3167.60 | 360.0 | 118.09 |

| C/γ(°) | 45.0 | 50.0 | 55.0 | 60.0 | 65.0 | 70.0 | 75.0 | 80.0 | 85.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 1519.04 | 786.10 | 689.20 | 637.22 | 576.32 | 463.11 | 323.83 | 196.65 | 92.02 |
| 30.0 | 1520.72 | 810.32 | 693.24 | 633.18 | 559.33 | 461.77 | 343.34 | 192.28 | 76.04 |
| 60.0 | 1076.28 | 729.91 | 663.46 | 579.02 | 488.35 | 394.98 | 282.61 | 159.81 | 53.16 |
| 90.0 | 1064.84 | 748.08 | 673.39 | 553.28 | 849.52 | 562.19 | 346.37 | 182.02 | 85.96 |
| 120.0 | 854.56 | 731.09 | 659.26 | 566.74 | 478.76 | 376.65 | 262.59 | 137.27 | 41.72 |
| 150.0 | 1027.83 | 771.97 | 726.55 | 658.75 | 570.10 | 458.57 | 311.88 | 156.45 | 63.08 |
| 180.0 | 993.85 | 788.45 | 750.43 | 689.54 | 600.21 | 441.24 | 297.92 | 179.66 | 74.86 |
| 210.0 | 1062.82 | 768.60 | 726.71 | 655.05 | 565.73 | 456.72 | 318.44 | 168.39 | 70.48 |
| 240.0 | 1402.96 | 786.43 | 704.68 | 635.88 | 545.20 | 450.50 | 334.93 | 231.98 | 98.91 |
| 270.0 | 1407.00 | 742.53 | 671.20 | 578.34 | 555.63 | 593.48 | 374.12 | 217.68 | 121.12 |
| 300.0 | 1783.14 | 896.62 | 661.44 | 611.15 | 528.38 | 442.42 | 336.78 | 238.71 | 124.82 |
| 330.0 | 1448.89 | 747.57 | 664.14 | 613.84 | 547.90 | 460.08 | 335.77 | 185.04 | 80.58 |
| 360.0 | 1519.04 | 786.10 | 689.20 | 637.22 | 576.32 | 463.11 | 323.83 | 196.65 | 92.02 |

| C/γ(°) | 90.0 | 95.0 | 100.0 | 105.0 | 110.0 | 115.0 | 120.0 | 125.0 | 130.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 12.11 | 3.53 | 4.21 | 5.38 | 6.73 | 8.92 | 12.28 | 16.99 | 22.88 |
| 30.0 | 9.25 | 4.21 | 5.21 | 6.39 | 7.74 | 9.59 | 12.78 | 18.17 | 26.07 |
| 60.0 | 4.21 | 4.21 | 5.21 | 6.39 | 7.91 | 10.43 | 14.30 | 20.19 | 29.44 |
| 90.0 | 6.56 | 4.04 | 5.05 | 6.06 | 7.57 | 9.76 | 13.96 | 20.02 | 29.10 |
| 120.0 | 3.53 | 4.37 | 5.21 | 6.39 | 8.07 | 11.10 | 15.81 | 22.88 | 33.81 |
| 150.0 | 4.88 | 4.21 | 5.21 | 6.39 | 7.74 | 10.43 | 14.47 | 20.86 | 30.62 |
| 180.0 | 3.87 | 4.37 | 5.21 | 6.39 | 8.07 | 10.77 | 15.14 | 22.04 | 31.96 |
| 210.0 | 5.38 | 3.70 | 4.37 | 5.72 | 7.91 | 10.93 | 15.64 | 21.36 | 28.77 |
| 240.0 | 27.42 | 3.53 | 4.21 | 5.21 | 6.90 | 9.59 | 13.79 | 19.01 | 26.24 |
| 270.0 | 24.90 | 3.53 | 4.04 | 5.21 | 6.73 | 9.59 | 13.63 | 19.01 | 26.24 |
| 300.0 | 36.00 | 3.70 | 3.87 | 4.88 | 6.39 | 8.41 | 11.78 | 16.65 | 22.71 |
| 330.0 | 12.78 | 3.70 | 4.21 | 5.21 | 6.73 | 9.25 | 12.78 | 17.49 | 23.89 |
| 360.0 | 12.11 | 3.53 | 4.21 | 5.38 | 6.73 | 8.92 | 12.28 | 16.99 | 22.88 |

| C/γ(°) | 135.0 | 140.0 | 145.0 | 150.0 | 155.0 | 160.0 | 165.0 | 170.0 | 175.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 29.61 | 37.51 | 46.43 | 55.68 | 65.10 | 74.35 | 84.45 | 96.73 | 110.02 |
| 30.0 | 36.84 | 48.95 | 62.58 | 75.53 | 87.64 | 99.42 | 110.18 | 119.44 | 127.18 |
| 60.0 | 41.38 | 54.84 | 68.97 | 81.59 | 93.53 | 104.80 | 115.23 | 123.98 | 129.53 |
| 90.0 | 41.55 | 55.18 | 68.80 | 81.42 | 93.36 | 103.46 | 112.88 | 120.78 | 126.33 |
| 120.0 | 46.26 | 59.89 | 72.84 | 85.46 | 95.72 | 104.97 | 114.05 | 121.46 | 125.49 |
| 150.0 | 42.73 | 55.34 | 67.96 | 80.41 | 91.01 | 101.27 | 110.02 | 116.91 | 121.79 |
| 180.0 | 43.57 | 56.35 | 69.14 | 81.42 | 91.68 | 100.43 | 108.84 | 115.57 | 119.10 |
| 210.0 | 36.67 | 46.26 | 55.85 | 65.61 | 74.86 | 84.78 | 97.23 | 111.53 | 123.47 |
| 240.0 | 33.98 | 42.56 | 52.32 | 61.74 | 71.33 | 81.25 | 93.53 | 108.84 | 123.31 |
| 270.0 | 33.98 | 42.73 | 52.15 | 61.40 | 70.65 | 81.08 | 94.20 | 109.01 | 121.79 |
| 300.0 | 30.28 | 38.35 | 47.61 | 57.53 | 66.78 | 76.54 | 88.32 | 102.11 | 116.91 |
| 330.0 | 31.29 | 39.36 | 48.45 | 58.37 | 67.79 | 77.38 | 88.99 | 101.44 | 113.38 |
| 360.0 | 29.61 | 37.51 | 46.43 | 55.68 | 65.10 | 74.35 | 84.45 | 96.73 | 110.02 |

## 5.Test Equipment

| Equipment Name | Manufacturer | Model No. | Equipment No. | Calibration Due Date |
|---|---|---|---|---|
| 2m Integating Sphere | SENSING | SL-300 | AOC-S-126 | 2026-04-13 |
| Horizontal Distribution Photometer | SENSING | GMS1800D | AOC-S-124 | 2026-04-13 |
| Standard Lamp | SENSING | 220V/150W | AOC-S-156 | 2026-06-05 |
| Digital power meter | HENGHE | WT310E | AOC-S-012 | 2026-04-13 |
| Digital power meter | SENSING | UI2008 | AOC-S-123 | 2026-04-13 |
| Digital power meter | SENSING | UI2021 | AOC-S-123 | 2026-04-13 |
| DC source | OYHS | OYHS-Z120V-50A | AOC-S-062 | 2026-04-13 |
| Variable frequency power supply | WOSEN | BP6005 | AOC-S-129 | 2026-04-13 |
| Variable frequency power supply | AIPUSI | KDF-500 | AOC-S-130 | 2026-04-13 |
| Oscilloscope | TEKTRONIX | MDO3012 | AOC-S-028 | 2026-04-13 |

# Photo Document

Fig.1

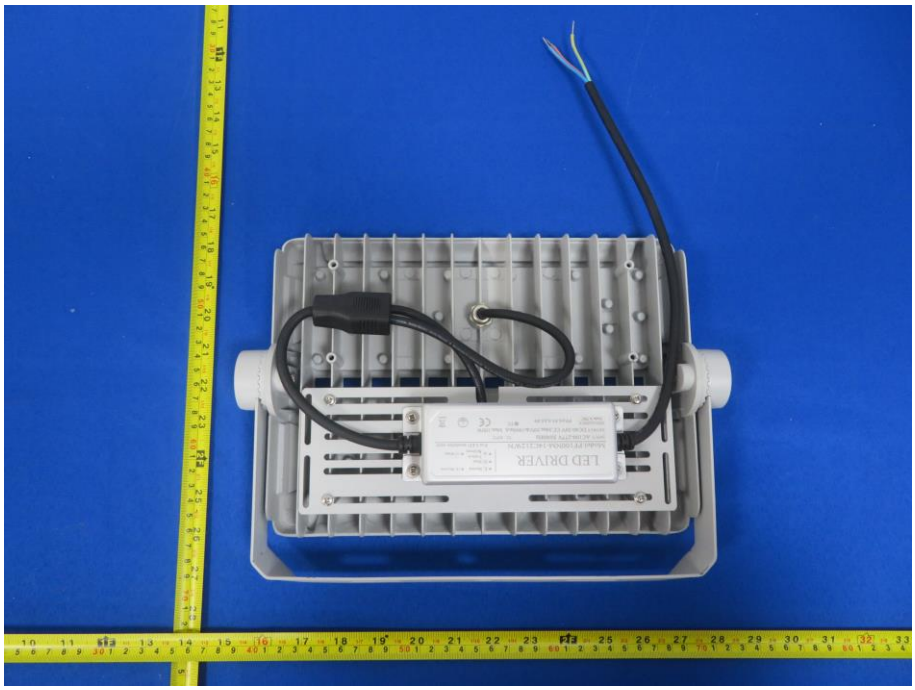



Fig.2

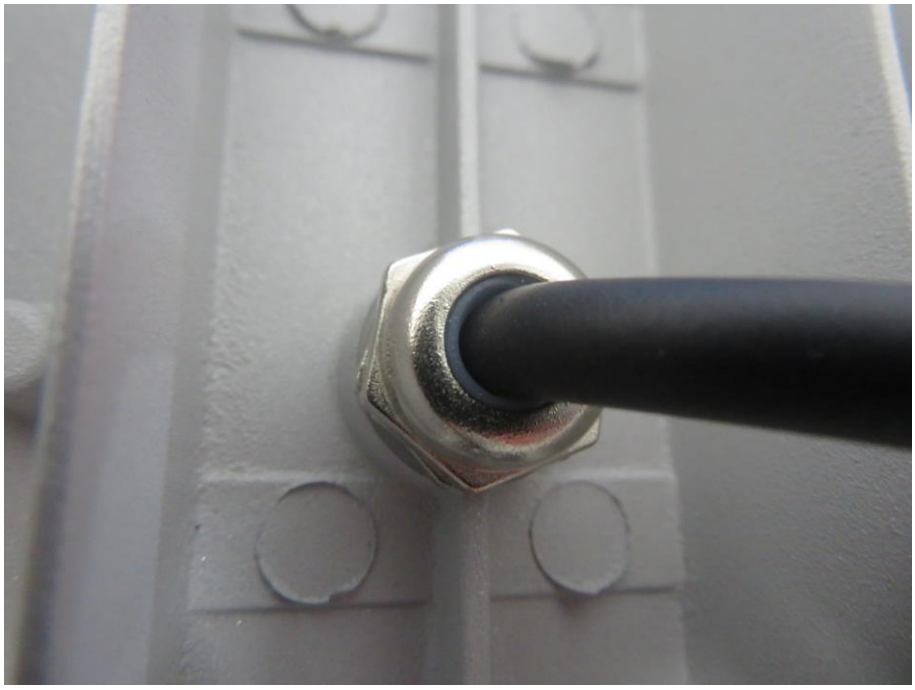


Fig.3


LED DRIVER
L Brown
+ Brown
N Blue
Yellow &Green
— Blue
Model:PF100NM-14C212WN
For LED modules only
INPUT AC100-277V 50/60Hz
TC 90°C
OUTPUT DC40-50V CC.Max:50Vdc1900mA Max:100W
MFG:20250819
Made In PRC
PF≥0.95 η≥0.89
TC

Fig.4

Fig.5

-- End of Report --